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ABSTRACT

A study examined the relationship between communication apprehension (CA) and academic achievement among elementary school students and whether that relationship was different for males and females. Subjects were 144 (74 females, 70 males) students enrolled in grades 2-5 at a laboratory school on the campus of a midwestern university. Academic achievement was measured by the Iowa Test of Basic Skills, and scores for the test composite and the vocabulary, reading, language, work skills, and mathematics subtests were analyzed. The Measure of Elementary Communication Apprehension (MECA) was used to assess subjects' fears about communication in the elementary school environment. Students' CA and achievement test scores were correlated, and relationships between CA and achievement for males and females were compared. Results indicated that CA and academic achievement were significantly and negatively related (high CA was associated with low academic achievement). All correlations between CA and achievement for females were very low, while those for males were significant, especially in language achievement. This suggested that a language skills deficit may be contributing to CA in these students. The results also suggest that teachers must learn to identify high CA children in their classrooms and adopt strategies and techniques that encourage and reward them for participating in class. (AEW)

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Communication Apprehension and Academic Achievement Among Elementary School Students

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Communication Apprehension and Academic Achievement Among Elementary School Students

Abstract

This study examined the relationship between communication apprehension (CA) and academic achievement among male and female elementary school students. Subjects for this study were 144 students enrolled in grades 2-5 at a laboratory school on the campus of a midwestern university. Academic achievement was operationally defined as scores on the Iowa Tests of Basic Skills. Communication apprehension was operationally defined as scores on the Measure of Elementary Communication Apprehension. Results indicated that CA was significantly and negatively related to academic achievement. However, when seperate correlations were calculated for males and females, significant negative correlations were observed for males only. Discussion focused on the implications of these findings for teachers and future research.

Communication Apprehension and Academic Achievement Among Elementary School Students

Numerous research projects (Bashore, 1971; McCroskey & Andersen, 1976; Garrison, Seiler & Boohar, 1977; Scott & Wheeless, 1977; Scott, Wheeless, Yates & Randolph, 1977; Davis & Scott, 1978; Powers & Smythe, 1980; Comadena, 1985) have demonstrated that communication apprehension (CA), a fear or anxiety associated with either real or anticipated communication with another (McCroskey, 1984), is significantly and negatively related to student learning. In these studies, CA is argued to have a negative relationship with achievement because students high in CA, compared to students low in CA, will avoid classroom interaction to avoid experiencing the negative feelings they have learned to associate with classroom communications. This pattern of social withdrawl will lead to lower academic achievement since many of the pedagogical strategies utilized in the classroom to affect student learning require students to interact regularly with teachers and peers (See Note 2).

While this developing body of literature clearly depicts a negative relationship between CA and student learning, the results of this research are limited in their generalizability for two reasons. First, researchers have failed to systematically study the relationship between CA and achievement among elementary school students. That

these students have been overlooked as subjects for research is surprising since explanations concerning the development of CA, such as modeling, reinforcement, and heredity (McCroskey, 1984), suggest that children may enter elementary school with levels of CA that may influence significantly their willingness to participate in classroom interactions (Comadena, 1985). In addition, Daly and Friedrich (1981) maintain that early school experiences, as well as experiences at home, may be significant in the development of CA. To date, only two studies (Comadena & Comadena, 1984; Comadena, 1985) have examined the relationship between CA and learning among elementary (and middle) school students. In the Comadena and Comadena (1984) study, CA was not found to be related to academic achievement (as measured by the Stanford Achievement Test) in a small sample of second grade students (n = 48) in self-contained classrooms (See Note 3). In a 1985 study, which involved 1045 students in grades 2-8 also in self-contained classrooms, Comadena found that students high in CA, compared to students low and moderate in CA, had lower academic achievement in mathematics and reading on the Stanford Achievement Test. Additional research is needed to validate these findings and to extend our understanding of the relationship between CA and achievement in children in other (e.g., departmentalized) learning systems.

A second, more conspicuous, limitation with past research has been the lack of attention given to the

interrelationship among CA, achievement, and sex of students. Bashore's (1971) study of high school students in a laboratory school revealed some fairly strong negative correlations between CA and scores on the Illinois State High School Test ($r = -.38$), the verbal portion of the College Entrance Examination Board ($r = -.62$), and the Preliminary Scholastic Aptitude Test ($r = -.54$). However, these correlations were significant for females only ($n = 32$); no significant correlations were observed for males ($n = 43$). At the lower grade levels, females generally demonstrate higher achievement than males (Maccoby, 1966; Stockard & Wood, 1984) and higher CA (Garrison & Garrison, 1979). These findings suggest that, in the elementary school, the relationship between CA and achievement may be different for males than for females. To date, no research is available that examines this issue. The two studies conducted on elementary school students (Comadena & Comadena, 1984; Comadena, 1985) did not explore sex differences in the relationship between CA and academic achievement.

Thus, the purpose of the present study was to examine the relationship between CA and academic achievement among elementary school students and to determine if the relationship between CA and achievement is different for males and females. The following hypothesis and research question were addressed in this research:

H: Communication apprehension is negatively

correlated with academic achievement among elementary school students.

RQ: Is the correlation between CA and achievement different for males than for females?

Methods

Subjects

Subjects were 144 (74 females, 70 males) elementary school students enrolled in grades 2-5 at a laboratory school on the campus of a midwestern university.

Measurement

Academic achievement was measured by the Iowa Tests of Basic Skills. Scores for the test composite and the following subtests were analyzed: vocabulary, reading, language, work skills, and mathematics. National percentile rank scores were utilized in statistical analyses. The national percentile rank score reflects a student's achievement in relation to every 100 students who took the test.

CA was operationally defined as scores on the Measure of Elementary Communication Apprehension (MECA; Garrison & Garrison, 1979). The MECA consists of 20 questions that address one's fears about communication in the elementary school environment. The MECA uses language that is

appropriate for children and incorporates a progression of smiling and frowning faces for response options. Evidence of the reliability and validity of the MECA is reported in Garrison and Garrison (1979). In the present study, the MECA had an internal reliability (Cronbach's alpha) of .76 for male subjects and .77 for female subjects (See Note 4).

Procedures

The Iowa Tests of Basic Skills were administered to subjects in September. In the following April, the MECA was orally administered to subjects by their teachers. Teachers were given detailed written instructions for administering the MECA, which took approximately 20 minutes to administer. Achievement test scores were recorded by the principal investigator from students' permanent school records.

Statistical Analysis

To test the research hypothesis, students' CA scores and achievement test scores were correlated. To answer the research question, the correlations between CA and achievement for males and females were compared through an analysis of z-scores using Fisher's logarithmic transformation (Lindeman, Merenda & Gold, 1980). This test determines whether the correlation coefficients between two variables in two different populations are equal (Lindeman et al., 1980). Alpha was set a .05 for all tests of significance.

Results

The hypothesis maintained that CA and academic achievement were significantly and negatively related. Results supported this hypothesis. Significant correlations were observed between CA and achievement in vocabulary ($r = -.20$), reading ($r = -.18$), language ($r = -.19$), work skills ($r = -.25$), mathematics ($r = -.21$), and the test composite ($r = -.22$). (See Table 1.)

The research question asked whether the correlation between CA and achievement was different for males than for females. When seperate correlations were examined for each sex, several significant correlations were observed for males but not for females (See Table 1). Specifically, the following correlations between CA and achievement were observed for males (all significant at $p < .05$): vocabulary ($r = -.34$), reading ($r = -.25$), language ($r = -.35$), work skills ($r = -.34$), mathematics ($r = -.33$), and test composite ($r = -.36$). For females, the observed correlations between CA and achievement were as follows (each non-significant): vocabulary ($r = -.03$), reading ($r = -.11$), language ($r = -.007$), work skills ($r = -.15$), mathematics ($r = -.06$) and test composite ($r = -.06$). The z-transformation test conducted on each achievement variable revealed one significant difference (See Table 1). The correlation between CA and language achievement was

significantly different for males (r = -.35) and females (r = .007). Tests of sex differences in correlations between CA and vocabulary achievement, mathematics achievement and the test composite approached statistical significance (See Table 1).

In this study, males had an average MECA score of 48.96 (s = 9.06). Females had an average MECA score of 50.19 (s = .94). The two groups did not differ significantly in their levels of CA (t = .86, df = 142, p = .39).

Discussion

The purpose of the present study was to assess the relationhip between communication apprehension (CA) and academic achievement among elementary school students and to determine if the correlation between CA and achievement differed for males and females. Data analyses revealed a significant negative relationship between communication apprehension (CA) and student achievement. High levels of CA were associated with low levels of academic achievement on all sub-tests (vocabulary, reading, language, work skills, mathematics) and the test composite of the Iowa Tests of Basic Skills. Although the observed correlations were low (correlations ranged from -.19 to -.25), the results indicate that the levels of CA experienced by children in the elementary school could negatively affect

academic achievement. These results are consistent with the results of previous research which has used elementary-, middle-, high school and college students as subjects and suggest that educators, at all levels of our educational system, should be concerned with the potentially negative impact CA may have on student achievement.

Although males and females did not differ in their levels of CA, data analyses revealed that the correlation between CA and achievement differed for the two sexes. All correlations between CA and achievement for females were very low (near zero) and non-significant whereas the correlations for males ranged from -.25 to -.36 and all were significant. Tests revealed that, in the population, the correlation between CA and language achievement was significantly different for males (r=-.35) and females (r=.007); differences in correlations between CA and vocabulary achievement, mathematics achievement and the test composite for the two sexes approached statistical significance. The signifcant negative correlation between CA and language achievement for males suggests that a language skills deficit may be contributing to the development of CA in these students. Overall, these results indicate that educators of elementary school students should be particulary sensitive to the adverse effect CA may have on the academic achievement of male students.

At least two explanations may be offered for the observed sex differences in correlations between CA and

achievement. First, male and female elementary school students may develop different abilities to cope with their CA. Perhaps at this relatively early age females high in CA, compared to males high in CA, develop keener receiving abilities, study longer outside of class, and/or seek the assistance of trusted others when experiencing difficulties with course material. A second explanation may be that elementary school teachers develop different performance expectations for males and females high in CA. That teacher expectations may influence student achievement is a well-documented finding in the educational literature (Dusek, 1985; Rosenthal & Jacobson, 1968). A study by McCroskey and Daly (1976) revealed that elementary school teachers expect lower levels of achievement from students high in CA, compared to students low in CA. However, no research is available that examines whether teachers' expectations for achievement differ for males and females both high in CA. In the elementary school, quiet girls may be percieved more positively than quiet boys.

This study has demonstrated, then, that a significant negative relationship exists between CA and academic achievement among elementary school students. The implications of this finding are clear. Teachers must learn how to identify high communication apprehensive children in their classrooms and adopt teaching strategies and classroom management techniques that encourage and reward high communication apprehensive students for participating in

classroom communications with teacher and peers (McCroskey,1980). Teachers must also recognize that a child's communication experiences in the classroom (with teacher and peers) may have a very strong impact on the development of CA in that child (Daly & Friedrich, 1981).

While reseach has demonstrated a strong statistical link between CA and achievement, there is still a need for additional research in this area. Specifically, research should examine, in a true experimental design, the relationship between CA and achievement to clarify the causal relationship between these two variables. While high levels of CA may cause low levels of achievement, it is also possible that low levels of achievement cause high levels of CA, or that both vary as a function of some other factor. Systematic observation of verbal and nonverbal communication patterns of high and low communication apprehensive students will also help establish a causal link between CA and achievement (McCroskey, 1977).

Research is also needed that explores the interrelationships among sex, CA and achievement across grade levels (e.g., K - 12). The present study revealed that, in the elementary school, CA has a more negative relationship with the academic achievement of males than of females. Bashore's (1971) study of high school students revealed that CA was significantly and negatively related to the academic achievement of females, but not males. Research is needed to determine whether this sex difference

is a function of methodological differences in the two studies, or whether factors in- and/or outside the school environment contribute to a change in the relationship between CA and achievement for the two sexes. Such research may aid our understanding of the development of CA and lead to improved educational practices.

Notes

1. The authors wish to thank Catherine Konsky and William Cupach for their contributions in this research.

2. See Daly and McCroskey (1984) for current reviews of theory and research on CA.

3. Comadena and Comadena (1984) distinguished between self-contained and departmentalized instructional systems. A self-contained system is one where there is one teacher and a moderate number of students and the teacher instructs students in all content areas. A departmentalized system is one where there is one teacher for each content area. The departmentalized system would appear to present the greatest difficulty for the student high in CA since he or she would have to interact with a number of individuals with different communication styles and social sensitivities (Comadena & Comadena, 1984).

4. Data were originally collected on grades 1-6 at the laboratory school. However, the MECA was not found to be sufficiently reliable in grades 1 (.52) and 6 (.62) to permit meaningful analyses. Thus, data from those students were excluded from the study. The low reliability of the MECA in grades 1 and 6 was most likely a function of improper administration of the scale by teachers.

TABLE 1

Pearson Correlation Coefficients Between CA & Achievement Test Scores and Z-scores

	Combined (n=144)	Males (n=70)	Females (n=74)	Z-scores
Vocabulary	-.20**	-.34**	-.03	-1.91
Reading	-.18*	-.25*	-.11	-0.85
Language	-.19**	-.35**	.007	2.19*
Work Skills	-.25**	-.34**	-.15	-1.95
Mathematics	-.21**	-.33**	-.06	-1.66
Composite	-.22**	-.36**	-.06	-1.88

NOTE: 1. * indicates $p < .05$ (two-tailed).
2. ** indicates $p < .01$ (two-tailed).
3. At alpha = .05, the critical region for z is $z > 1.96$ or $z < -1.96$.

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